



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/691,943	10/23/2003	Henri Delalu	454.003	6308

47888 7590 09/09/2005

HEDMAN & COSTIGAN P.C.  
1185 AVENUE OF THE AMERICAS  
NEW YORK, NY 10036

EXAMINER

PAK, JOHN D

ART UNIT

PAPER NUMBER

1616

DATE MAILED: 09/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/691,943

Applicant(s)

DELALU ET AL.

Examiner

JOHN PAK

Art Unit

1616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 10/23/03.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

Claims 1-10 are pending in this application.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-8 and 10 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for the reaction being carried out at a temperature between -15°C and 0°C, for example, does not reasonably provide enablement for any temperature range or unspecified reaction temperature. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to practice the invention commensurate in scope with these claims.

Except for claim 9, all other claims are open to any reaction temperature. Only claim 9 is limited to the reaction being carried out at a temperature between -15°C and 0°C. The specification requires such broad interpretation because it states, "The reaction is **generally** carried out at a temperature of between -15°C and 0°C" (page 4, lines 24-25, emphasis added), which means the reaction is not strictly limited to such temperature range when the claims must be interpreted.

However, U.S. Patent No. 6,222,071 discloses that the reaction of an ammoniacal solution with hypochlorite solution must be low, -5°C to -20°C (column 3, lines 3-4; column 1, lines 27-31). Delalu et al. (Reference U on PTO-892) disclose the

reactor temperature not exceeding  $-10^{\circ}\text{C}$  for the same reaction of ammoniacal solution with hypochlorite solution and emphasizes the need for low temperature due to the kinetics and exothermic nature of the reaction (page 220, left column, see the first bullet under section 2.3; page 221, right column, last paragraph). Derwent abstract 1991-118629 discloses the same reaction of  $\text{NH}_3/\text{NH}_4\text{Cl}$  with sodium hypochlorite to be carried out at  $-10$  to  $10^{\circ}\text{C}$  (see the second paragraph of the abstract).

The discussion above captures the nature of the invention, state of the prior art, relative skill of those in the art, predictability or unpredictability of the art, and the breadth of the claims. Further, it is noted that applicant fails to provide any direction or guidance as to performing the synthesis process at a reaction temperature that is significantly higher than the disclosed range of  $-15^{\circ}\text{C}$  and  $0^{\circ}\text{C}$ . Specification Examples 1 and 3 show the reaction temperature to be about  $-7^{\circ}\text{C}$ , Example 2 shows the reaction temperature to be about  $-8^{\circ}\text{C}$ .

In summary, the prior art considers the reaction temperature to be a critical reaction parameter, and all the prior art reaction temperatures are limited at the low temperature range. In contrast, applicant has not provided sufficient direction or guidance to carry out the reaction at a reaction temperature which is outside the range of about  $-15^{\circ}\text{C}$  and  $0^{\circ}\text{C}$ . Therefore, based on the totality of the factors to be weighed above, the quantity of experimentation one skilled in the art would be faced with in order

to practice the instant invention to the full extent claimed (i.e. no reaction temperature limitation) would be undue.

For these reasons, claims 1-8 and 10 must be rejected as lacking in adequate enabling support.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-9 are rejected under 35 U.S.C. 102(b) as being anticipated by Delalu et al.

Delalu et al. explicitly disclose a high chlorometric degree hypochlorite composition, which is used as starting material in a synthetic process for monochloramine (Table 1 on page 221). The 101.9 chlorometric degree hypochlorite solution contains, inter alia, 25.9% (4.54 M) sodium hypochlorite and 0.77% total NaOH (*id.*). One skilled in the art would understand the hypochlorite solution to be aqueous in the absence of contrary indication of a different medium as the base. The 0.77% NaOH is equivalent to 0.19 mol/liter. In their Experiment 3 (page 223, right column), Delalu et al. explicitly disclose reacting a mixed aqueous ammoniacal solution with an equivalent volume of 4.63 M hypochlorite solution. The mixed ammoniacal solution contained 5 M

ammonium chloride. Hence, since the reactant solution volumes are the same, the disclosed molar ratio of the concentration of ammonium chloride in the reaction medium to the concentration of sodium hypochlorite in the reaction medium is  $5/4.63 = 1.08$  or 1.1, rounded up. The reaction is carried out so that the temperature in the reactor is not higher than  $-15^{\circ}\text{C}$  (*id.*).

Because Delalu et al. disclose the 4.54 M hypochlorite solution that they used contains 0.77% total NaOH (about 0.19 mol/liter), the NaOH concentration in the 4.63 M hypochlorite solution used in Experiment 3 would have been slightly higher, but still well within applicant's 0.1 to 0.5 mol/liter claim feature (claim 7).

All of the claim features set forth in applicant's claims 1-9 are thereby clearly met by the disclosure of Delalu et al. The claims are therefore anticipated.

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to JOHN PAK whose telephone number is **(571)272-0620**. The Examiner can normally be reached on Monday to Friday from 8 AM to 4:30 PM.

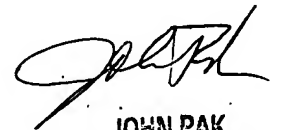
If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's SPE, Gary Kunz, can be reached on **(571)272-0887**.

The fax phone number for the organization where this application or proceeding is assigned is **(571)273-8300**.

Art Unit: 1616

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571)272-1600.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



JOHN PAK  
PRIMARY EXAMINER  
GROUP 1000